



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, WA 98101

Draft December 5, 2007

Reply to Attn Of:

D. Robert Lohn  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northwest Region  
7600 Sand Point Way, N.E.  
Building 1  
Seattle, WA 98115

Dear Mr. Lohn:

The U. S. Environmental Protection Agency (EPA) is pleased to provide comments to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries), on the October 30, 2007, Draft Remand for the Operation of the Federal Columbia River Power System Biological Opinion (Draft Remand). EPA is committed to a partnership with NOAA Fisheries in salmon recovery and restoration based upon the close relationship between the Endangered Species Act and the Clean Water Act. EPA has long believed that water quality improvements are essential to Columbia River Basin salmon recovery. Our review of the Draft Remand showed 20 Reasonable and Prudent Alternatives (RPAs) directly connected to water quality improvements, a significant accomplishment and acknowledgement of the role of water quality in salmon restoration and recovery. The following comments are provided as a commitment to our ongoing support of this important work.

**Water Temperature**

As described in the Environmental Baseline Section, temperature is a critically important factor in salmon biology and healthy ecosystems because water temperature affects all life stages of fish and has many indirect affects. It directly affects spawning, rearing, migration and overall survivability. Further, the incidence and intensity of several diseases are directly related to increased water temperatures. Indirect effects of increased water temperature include changing food availability, increasing competition for feeding and rearing habitat, and enhancing the habitat for predatory fishes.

EPA has made a long standing commitment to improving water temperature in the Pacific Northwest through our work with states and tribes on regional guidance and water quality standards. Oregon and Washington have now adopted temperature standards consistent with our 2003 regional temperature guidance. We approved the Oregon standards in 2004, and we are moving towards taking action on the Washington standards. Oregon has developed hundreds of Total Maximum Daily Loads based on the new Temperature standards, including for the Willamette River.

EPA strongly supports RPA 4, which commits to continued operation of cold water releases from Dworshak dam to maintain temperatures at or below 68°F at the Lower Granite Dam tailrace. As discussed in the Environmental Baseline, Dworshak cold water releases have significantly reduced summer temperatures in the Lower Granite Reservoir, which have had a significant benefit to both juvenile and adult salmon.

EPA, however, recommends that the Final Biological Opinion further acknowledge the importance of temperature in salmon recovery and restoration for both the Columbia and Snake River Mainstem and the Tributaries. Small improvements in water temperature will have a meaningful affect on salmon health and we would encourage NOAA Fisheries to include language in the Final Opinion that commits to addressing water temperature problems throughout the Columbia River Basin. Additionally, we recommend the Final Opinion include the following specific recommendations in the below listed sections of the Opinion.

First, the Environmental Baseline accurately describes how the Snake and Columbia River dams and reservoirs have caused temperatures to be warmer in the late summer and fall (thermal inertia), peak summer temperature to be slightly reduced, and temperature variability to be decreased. However, what is not fully discussed in the loss of temperature diversity in these mainstem rivers, which historically likely provided areas and periods of cool water refuge to allow salmon to migrate up and down the rivers with minimal adverse effects from warm summer temperatures. We recommend this environmental baseline condition be described and refer you to the Northwest Power Planning Council's 1996 and 2000 *Return to the River* reports by the Independent Scientific Group.

Second, the Effects Analysis indicates that the RPA includes efforts to improve in-river conditions (flow management and temperature control) and acknowledges the Prospective Actions will continue to cause adverse effects to juvenile migrants. However, the temperature adverse effects are not discussed. As briefly noted in the Environmental Baseline, the prolonged exposure of migrant juveniles to high water temperatures in the summer months, which is caused by the dams and the managed flow regime, will continue to cause significant adverse effects to juveniles. We recommend this adverse effect to juveniles be described in more detail in the Effects Analysis.

Third, with respect to adult migrants, the Effect Analysis indicates the FCRPS has only a modest effect on returning adults and does not mention the adverse temperature effects to adults. This is inconsistent with the Environmental Baseline, which does mention how elevated temperatures can adversely affect adult migrants in the form of pre-spawning mortality, increase the incident of disease, delayed migration and spawning, reduce migration fitness, and reduce viability of eggs in holding adults. The thermal shift caused by the dams and reservoirs, which warms the rivers in the late summer and fall during the up-migration period, contributes significantly to these adverse effects. We recommend these adult migrant adverse effects be described in the Effect Analysis. We also note the cold water releases from Dworshak dam have significantly benefited adult migrants in the Snake River. For instance, the change in the returning fish to redd ratio for Fall Chinook salmon above Lower Granite dam since the onset of Dworshak cold water releases suggests that these cold water releases have significantly reduced pre-spawning mortality

(the fish to redd ratio averaged 24.0 and 3.2 for the 1986–1992 and 1993-2006 periods, respectively).

Fourth, the Water Quality Plan for the Mainstem Columbia and Snake River (RPA 15) provides an opportunity to address future water temperature work efforts. EPA sent a letter to Allen Chin, U.S. Army Corps of Engineers, on February 20, 2007, recommending specific actions to address water temperature in that Water Quality Plan. We would like to see special focus in RPA 15 on the following actions identified in the February 20, 2007, letter. First, EPA would like to see collaborative discussions to investigate the cool water releases from the Hells Canyon hydroelectric project, and second, EPA would like to see collaborative discussions to investigate the feasibility of operational changes and/or penstock withdrawals at Grand Coulee Dam for potential water temperature improvements. EPA review under National Environmental Policy Act authorities has shown potential temperature benefits in the Snake River from cool water releases associated with the installation of a temperature control structure at Brownlee Dam. Given the ecosystem significance of water temperature and the limitations of actions that can be taken in the Columbia/Snake River Mainstem, we recommend that the Final Opinion address the need for collaborative discussions to address these two potential actions.

### **Columbia River Estuary**

EPA recognizes the important role of the Columbia River estuary in restoring Columbia River salmon stocks. According to our review, the Columbia River Estuary is addressed in RPA 36, 37, 38, 58, 59, and 60. We would like to encourage you to work through the Lower Columbia River Estuary Partnership (LCREP) as much as possible in these work efforts. The Lower Columbia River was designated by EPA an estuary of “national significance” as a part of EPA’s National Estuary Program in 1996. As a part of that designation, LCREP developed an estuary management plan in 1999 and has convened a group of national expert scientists to help in restoring the Columbia River Estuary. LCREP has demonstrated regional leadership in estuary monitoring and habitat restoration. We highly encourage you to work with and through LCREP as you develop and implement assessment, monitoring and habitat restoration recovery efforts.

### **Tributary Habitat Restoration**

EPA is greatly encouraged by the depth of commitment to tributary restoration demonstrated in the Draft Remand. According to our review, EPA identified RPA 34, 35, 56, and 57 as addressing tributary habitat restoration. EPA has a large number of work efforts, including TMDL development, review and implementation; federal, state and private forest best management practices; watershed grant program funding; technical assistance and other efforts which support tributary habitat restoration through water quality improvements, and wetland and habitat restoration and protection efforts. As a contribution to NOAA Fisheries important tributary habitat restoration work efforts, EPA will commit to prioritize our work efforts in three Columbia River Basin tributaries to enhance salmon recovery. EPA is committed to the following three watersheds [PLACEHOLDER – Waiting for NOAA to get back to me] as priority tributaries.

### **Toxics and Salmon Recovery**

In 2006, EPA designated the Columbia River as a priority Large Aquatic Ecosystem in EPA's 2006-2011 Strategic Plan with a focus on reducing toxics. As a result of the increased attention, we have established numeric environmental targets we will need to reach over the next 5 years. Those targets include wetland restoration, sediment clean up and toxics reduction in fish and water, important for Columbia salmon restoration.

We are launching a number of collaborative efforts around the basin to achieve those numeric targets in addition to ongoing work including clean ups at Hanford, Portland Harbor and Lake Roosevelt. Examples of collaborative efforts include pesticide stewardship partnerships with agriculture, legacy pesticide collection events, and financial support for precision agriculture technologies. We are currently developing a State of the River Report for the Columbia River Basin to characterize and assess toxics problems, work efforts, monitoring needs and toxic reduction needs in the Columbia River Basin.

Research from the NOAA Science Center and others has shown that toxics found in the Columbia River including PCBs, DDT, PAHs, pesticides, and flame retardants, can impair juvenile salmon growth and development, affect immune function, act as hormone disruptors and reduce reproductive success, even at low concentrations. Toxics can also alter salmon sensory abilities (particularly smell) and behavior, making it difficult for juveniles to swim, feed, avoid predators, and navigate their migratory path.

EPA believes that toxic contamination is a significant habitat issue in the Columbia River, and that salmon recovery will be enhanced by reducing toxics in fish, water and sediment in the Columbia River Basin. There is a lot we do not understand about distribution, concentration, sources of toxic contamination and how juvenile salmon and other species are exposed to toxics. Further work and attention is needed to help answer these questions. EPA recommends that the Final Opinion acknowledge toxic contamination as a key limiting factor to help focus increased attention to better understand and reduce toxics in the Columbia River Basin.

### **Columbia/Snake River Mainstem Temperature TMDL**

EPA has just begun the initiation of an important work effort critical to Columbia River Basin habitat protection and restoration. A November 2006 workshop on federal dam compliance and water quality standards led to an agreement to convene talks between the U.S. Army Corps of Engineers, the Bureau of Reclamation and possibly others about restarting a temperature TMDL for the Columbia/Snake River. At a September 2007 meeting, EPA, the Corps and the Bureau, agreed to initially collaborate on modeling the Columbia River with a focus on potential two dimensional modeling for the Lower Snake River and for the Columbia River above Grand Coulee Dam.

RPA 15 identifies the expansion of water temperature modeling capabilities from Grand Coulee to Bonneville Dam to address summer temperature on the Columbia River. We are greatly encouraged by this proposed action and we look forward to coordinating these work efforts. We also want to ensure NOAA Fisheries and our other federal partners that our work on the Columbia/Snake Mainstem TMDL will complement the analysis and agreements forged in the development of the Draft Remand and the Final Biological Opinion.

In conclusion, EPA commends NOAA Fisheries for your efforts to develop a Draft Remand for the Operation of the Federal Columbia River Power System Biological Opinion to restore critically important salmon stocks in the Columbia River Basin. EPA remains committed to work with you and others to develop and implement recovery strategies in the Columbia River Basin. Please do not hesitate to contact me or Mike Gearheard, Director of Water and Watersheds, (206) 553-7151, if you wish to discuss these issues further.

Sincerely,

Elin Miller  
Regional Administrator